REMARKS/ARGUMENTS

Reconsideration and withdrawal of the rejections set forth in the Office Action dated 2 April 2002 are respectfully requested. A separate petition for a three-month extension of time accompanies this amendment.

The undersigned thanks Examiner Krizek for taking the time to discuss this application on the telephone Monday, 16 September. In our conversation, the Examiner agreed that claims 35 and 48 are at least distinguishable from U.S. Patent No. 5,906,472 ("Nakamura"), but we reached no specific conclusion regarding obviousness.

I. Amendments

The present amendment corrects some minor errors in the specification; cancels claims 1-34 and 49-63; amends claims 35-41, 44, and 48; and adds new claims 64-77. The amendments to claims 35-41 and 44 are intended solely to improve the consistency of terminology in the claims. In particular, these non-narrowing amendments are not being offered to overcome any art of record; the amendments to at least claim 48 actually broaden the scope of the claim rather than narrowing it.

Claims 1-34 and 49-63 are being cancelled because the Examiner withdrew them from consideration as relating to a non-elected invention. This cancellation is without prejudice to applicants' right to pursue the subject matter of these claims at a later date.

II. Rejections under 35 U.S.C. § 112, second paragraph

The Examiner rejected claims 35-47 under the second paragraph of § 112 because there was no antecedent basis for the term "the cassette" recited in claim 35. The present non-narrowing amendment of claim 35 replaces "the cassette" with "the retainer," which is previously referenced in claim 35. Accordingly, claim 35-47 are believed to meet the threshold requirements of the second paragraph of § 112.

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III. Rejections under 35 U.S.C. § 102

The Examiner rejected claims 35-48 under 35 U.S.C. § 102, stating that these claims are "clearly anticipated by Nakamura." No further explanation was given in the Office Action. The Examiner graciously discussed this rejection with the undersigned on Monday, 16 September. As discussed in that telephone interview, claim 35 calls for, *inter alia*, a removable tray retainer that includes a retaining element. The retaining element is movable between a storage position and a load/unload position. In its load/unload position, the retaining element engages a mounting element of a receiving station to releasably hold the removable tray retainer to a platform of the receiving station.

As best seen in Figures 2-4, Nakamura suggests transporting a number of universal trays KST in a tray storage container KAS. During transport, the trays KST may be held in the container KAS by a pair of L-shaped hooks FK. When the trays KST are to be removed from the cassette for processing, the hooks FK are pivoted open outwardly (as shown in Figure 4), allowing the trays to rest on a series of engagement hooks 12A and 12B. These engagement hooks are attached to a supporting section 11 of the tray removing apparatus 10 (see Figures 1 and 4 and column 13, line 48 – column 14, line 3). Thereafter, the stack of trays is completely supported by the hooks 12A-B and the elevator 14.

Nakamura does not suggest that the tray storage container KAS be coupled to the tray removing apparatus 10 in any fashion. To the contrary, Nakamura indicates that the tray storage container KAS should be removable at any time during the process. (See, e.g., column 16, lines 34-39.) Removing the tray storage container KAS would leave the trays KST exposed. Balancing the tray storage container KAS with the ends of the open hooks FK resting on the supporting section 11 seems prone toward mishap if the tray storage container KAS were accidentally nudged.

Hence, Nakamura does not teach a removable tray retainer which includes a movable retaining element that has a load/unload position in which it engages a mounting element to releasably hold the removable tray retainer to a platform of a

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receiving station. Accordingly, claim 35 is distinguishable from Nakamura. The undersigned also respectfully submits that claim 35 is non-obvious because nothing in Nakamura even remotely suggests the possibility of such a removable tray retainer. To the contrary, Nakamura teaches employing a universal tray storage container KAS which has L-shaped hooks FK and a separate series of engagement hooks 12A-B mounted atop the tray removing machine 10. Nakamura also suggests that the tray storage container KAS should be free to be removed at any time, specifically teaching away from the claimed apparatus wherein a retaining element of the removable tray retainer releasably holds the tray retainer to a platform. Consequently, claim 35 is believed to be patentable over Nakamura.

Claims 36-44 all depend from claim 35 are believed to be patentable at least by virtue of their dependency from an allowable base claim. These claims also recite a number of features which further patentably distinguish the claims from Nakamura. By way of example, claim 42 requires a lock/release mechanism which employs a shaft and a lock bearing to selectively allow or prevent movement of the cross-member along the shaft. The undersigned sees nothing which even remotely resembles this structure in Nakamura.

The Examiner also rejected claim 48 as anticipated by Nakamura. Claim 48 requires a portable tray retainer which includes, *inter alia*, retaining elements which have a load/unload position. At least a portion of the retaining elements engage a corresponding mounting element of a receiving station in the load/unload position to releasably hold the retainer to the receiving station. As noted above, Nakamura neither teaches nor suggests any such structure. Consequently, claim 48 is believed to be patentable over Nakamura.

IV. Conclusion

In view of the foregoing, the claims pending in the application comply with the requirements of 35 U.S.C. §112 and patentably define over Nakamura. A Notice of Allowance is, therefore, respectfully requested. If the Examiner has any questions or

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believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to call the undersigned at (206) 264-3848.

Respectfully submitted,
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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

The two paragraphs extending from page 8, line 24 – page 9, line 27 have been amended as follows:

The guide structure 50 can be covered by a plurality of panels 62 (identified by reference numbers 62a-62d). In this particular embodiment, first and second side panels 62a and 62b are attached to sides of the retaining assembly 52, and first and second end panels 62c and 62d are attached to opposing ends of the retaining assembly 52. The panels 62 can be attached to the retaining assembly 52 and to each other by a plurality of bolts 69 or other suitable fasteners. The retaining assembly 52 and the panels 62 define a housing for containing the tray stack. The panels ~~26~~ 62 can be a single formed sheet housing, casting or molding. Additionally, the guide structure 50 and the panels 62 can be formed from a single casting or molding.

The lock/release mechanism 100 can be coupled to the guide structure 50 and the cross-member 70 within the housing. Figure 3 is an exploded isometric view showing selected components of the lock/release mechanism 100. Referring to Figures 2 and 3 together, the lock/release mechanism 100 of this embodiment includes a spring plate 110, an actuator assembly 112, a plurality of elongated shafts 120, and a plurality of lock bearings 140 (Figure 2). Each shaft 120 has a through-pin 122 attached to the spring plate 110, a sleeve 124 slidably receiving the through-pin 122, and a key 128 attached to the through-pin 122. The key 128 is also received in a slot 126 through the sleeve 124. The sleeves 124 have a lower hub 123 received in a bushing 131, and the bushing 131 is received in a fixed block 130. The block 130 is attached to one of the first or second side panels 62a (not shown in Figure 3) or 62b. The blocks 130 accordingly hold the lower section of the sleeves 124 from moving vertically. The through-pins 122 can move axially through the sleeves 124 when the spring plate 110 moves vertically to move the retaining elements 90 in the direction of

the load/unload path P under the blocks 130 (as shown in broken lines). The actuator assembly 112 is rotated in one direction to rotate the through-pins 122, the sleeves 124 and the retaining elements 90 into the storage position (shown in solid lines in Figure 3) in which the retaining elements 90 project inwardly from the blocks 130 to obstruct the downward motion of the trays. The actuator assembly 112 can then be rotated ~~90°~~ 90° in the other direction to rotate the retaining elements 90 into the load/unload position (shown in broken lines in Figure 3) in which the retaining elements 90 do not project inwardly past the blocks 130 to allow downward movement of the trays.

The first paragraph on page 15 (lines 1-11) has been amended as follows:

Figures 8A-8C illustrate another embodiment of a sleeve 224 and a lock bearing 240. In this embodiment, the sleeve 224 has an axial bore 225, a flat section 229, and a plurality of truncated ~~angular~~ annular teeth 227 spaced apart from one another along the length of the sleeve 224. The lock bearing 240 has an axial hole 242 through which the sleeve 224 is received, a flat portion 243, and a slot 244 in the flat portion 243. As shown by Figure 8B, the flat section 229 of the shaft 224 faces the flat portion 243 of the lock bearing 240 in an unlocked position to allow the lock bearing 240 to slide along the shaft 224. Figure 8C illustrates the shaft 224 and the lock bearing 240 after the shaft 224 has been rotated by 90°. As shown in Figure 8C, at least one of the truncated annular teeth 227 is received in the slot 244 to prevent the lock bearing 240 from moving axially along the shaft 224.

In the Claims:

35. (Amended) A machine for processing microelectronic devices, comprising:

a receiving station having a platform with a tray singulator and a mounting element;

a removable tray retainer configured to hold a tray stack, the tray retainer having a guide structure including a first guide section and a second guide section, a cross-member extending at least partially between and transverse to the first and second guide sections, and a moveable retaining element spaced apart from the cross-

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member, the retaining element being moveable between a storage position in which the retaining element obstructs a load/unload path through the guide structure and a load/unload position in which the retaining element does not obstruct the load/unload path and also engages the mounting element to releasably hold the ~~cassette~~ retainer to the platform; and

a processing station that processes the microelectronic devices.

36. (Amended) The machine of claim 35 wherein the guide structure comprises a frame having a bearing plate with a first end and a second end, a plurality of elongated L-shaped channel members attached to the first and second ends of the bearing plate, and panels attached to the channel members and/or the bearing plate, the channel members including first and second channel members attached to the first end of the bearing plate defining the first ~~channel~~ guide section and third and fourth channel members attached to the second end of the bearing plate defining the second ~~channel~~ guide section, wherein the channel members project from the bearing plate in the direction of the load/unload path, and the first channel member faces the third channel member and the second channel member faces the fourth channel member.

37. (Amended) The machine of claim 35 wherein:

the first ~~channel~~ guide section comprises a first C-shaped channel member, and the second ~~channel~~ guide section comprises a second C-shaped channel member; and

the cross-member comprises a plate having a first end attached to the first C-shaped channel member and a second end attached to the second C-shaped channel member.

38. (Amended) The machine of claim 35 wherein:

the first ~~channel~~ guide section comprises a first C-shaped channel member, and the second ~~channel~~ guide section comprises a second C-shaped channel member;

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the cross-member comprises a plate having a first end attached to the first C-shaped channel member and a second end attached to the second C-shaped channel member; and

the retaining element comprises a tab projecting into a cavity between the first and second C-shaped channel members in the storage position.

39. (Amended) The machine of claim 35 wherein:

the first ~~channel~~ guide section comprises first and second L-shaped channel members, and the second ~~channel~~ guide section comprises third and fourth L-shaped channel members; and

the cross-member comprises a plate having a first end attached to the first and second L-shaped channel members and a second end attached to the third and fourth L-shaped channel members.

40. (Amended) The machine of claim 35 wherein:

the first ~~channel~~ guide section comprises first and second L-shaped channel members, and the second ~~channel~~ guide section comprises third and fourth L-shaped channel members;

the cross-member comprises a plate having a first end attached to the first and second L-shaped channel members and a second end attached to the third and fourth L-shaped channel members; and

the retaining element comprises a tab projecting into a cavity between the first and second L-shaped channel members in the storage position.

41. (Amended) The machine of claim 35 wherein:

the guide structure comprises a unitary shell, and the first ~~channel~~ guide section is defined by a first end of the shell and the second ~~channel~~ guide section is defined by a second end of the shell; and

the cross-member comprises a plate attached to the shell.

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44. (Amended) The machine of claim 35 wherein:

the guide structure comprises a frame having a bearing plate and a plurality of channel members including at least a first channel member projecting from one end of the bearing plate and a second channel member projecting from another end of the bearing plate, the first channel member defining the first ~~channel~~ guide section of the guide structure and the second channel member defining the second ~~channel~~ guide section of the guide structure;

the retaining element comprises a tab; and

the tray retainer further comprising a lock/release mechanism having an actuator, a shaft coupled to the actuator, and a lock bearing slidably receiving the shaft and attached to the cross-member, wherein movement of the actuator to a first position moves shaft to a lock position in which the lock bearing engages the shaft to prevent the cross-member from moving along the shaft and in which the tab projects into a space between the first and second channel members in the storage position, and wherein movement of the actuator to a second position moves the shaft to a release position in which lock bearing disengages the shaft to allow the cross-member to move along the shaft and in which the tab is at least partially removed from the space between the first and second channel members in the load/unload position.

48. (Amended) A machine for processing microelectronic devices, comprising:

a stack of ~~JEDEC~~ trays, each ~~JEDEC~~ tray carrying a plurality of microelectronic devices;

a receiving station having a platform with a tray singulator and a mounting element, the tray singulator being configured to selectively separate and retain a single ~~JEDEC~~ tray from the stack of ~~JEDEC~~ trays;

a portable tray retainer configured to hold the stack of ~~JEDEC~~ trays, the tray retainer being releasably attached to the receiving station and the tray retainer including a casing and a plurality of retaining elements, wherein the casing includes a guide structure with a first end spaced apart from the receiving station and a second end proximate to the receiving station, a cross-member extending across at least a

portion of the guide structure at least proximate to the first end, and an opening at least proximate to the second end through which the ~~JEDEC~~ trays can pass into or out of the casing, wherein the retaining elements are positioned proximate to the opening and are moveable between a storage position and a load/unload position, the retaining elements projecting into the guide structure in the storage position to hold the ~~JEDEC~~ trays in the retainer, and at least a portion of the retaining elements projecting away from the guide structure and engaging a corresponding mounting element of the receiving station in the load/unload position to allow the ~~JEDEC~~ trays to pass through the opening and to releasably hold the retainer to the receiving station, and wherein the cross-member is moveably positioned in the casing to move along a load/unload path to push a bottom tray of the tray stack against the retaining elements when the retaining elements are in the storage position and to drive the bottom tray out of the casing to the singulator when the retaining elements are in the load/unload position; and

a processing station that processes microelectronic devices on ~~JEDEC~~ trays that have been unloaded from the retainer.